



## NOAA Research in South Dakota



### SD-1 (Statewide)

#### **Climate and Global Change Program**

NOAA is responsible for providing climate information to the Nation in order to prepare and protect climate sensitive sectors of society and the economy. To carry out this mission, NOAA's Climate and Global Change Program conducts focused scientific research to understand and predict variations of climate. The Program is comprised of a number of research elements, each focusing on a specific aspect of climate variability. Taken together, this research contributes to improved predictions and assessments of the effects of climate variability and change on different environments over a continuum of time scales from season to season, year to year, and over the course of a decade and beyond. This research is accomplished through the strong support of the academic and private sectors, as well as NOAA and other federal laboratories. In FY 2001, NOAA's Climate and Global Change Program provided approximately \$11,200 in support of climate research in the State of South Dakota. For more information please visit <http://www.ogp.noaa.gov>

### SD-1 (Black Hills)

#### **Air Resources Laboratory Environmental Monitoring Tower**

The Air Resources Laboratory's Atmospheric Turbulence and Diffusion Division contributes to the GAPP/GEWEX program by operating five research energy/carbon flux towers in the continental United States. The sites are located at a deciduous forest site in East Tennessee, an agricultural site in central Illinois, a ponderosa pine stand in western South Dakota, and two grassland sites; one in eastern Montana and the other in central Mississippi. These sites are providing data that will be used to improve the representation of land/surface processes in both regional and global weather prediction models. For more information please visit <http://www.ogp.noaa.gov/mpe/gapp/>

### SD-1 (Clark)

#### **Forecast Systems Laboratory GPS Meteorological Observing System**

NOAA's Forecast Systems Laboratory (FSL) operates a rapidly expanding network of GPS Meteorological (GPS-Met) Observing Systems to monitor the total quantity of precipitable water vapor in the atmosphere. Currently, there are 93 systems over the contiguous 48 states and Alaska, and plans are being made to extend these observations to Hawaii, Puerto Rico, the Caribbean Islands, and Central America. Water vapor is an important but under-observed component of the atmosphere that plays a major role in severe weather events and the global climate system. GPS-Met systems provide accurate water vapor measurements under all weather conditions, including thick cloud

cover and precipitation, and do so at very low cost. The major reason why this system is so economical is that the network is being developed by FSL in cooperation with federal, state and local government agencies, universities, and the private sector. The GPS stations provide high-accuracy surveying and navigation services for National defense, automated agriculture, safe land and marine transportation, government infrastructure management, and 911 emergency response services. Fortuitously, these systems can also be used for meteorology with the addition of surface weather sensors. A GPS-Met system is operated by the U.S. Department of Transportation near Clark. For more information please visit <http://www.gpsmet.noaa.gov/jsp/index.jsp>

For further information about these and other NOAA programs, please contact NOAA's Office of Legislative Affairs at (202) 482-4981.

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